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IN THE CLAIMS:

Please amend the claims as follows:

1-48. (cancelled)

49. (currently amended) A solid three-dimensional prototype composition, comprising:

multiple layers of pre-ceramic deposited in contact with one another, each of said multiple layers of pre-ceramic comprising a particulate blend including a calcium phosphate source, ~~a reaction retardant, and a layered double hydroxide;~~

wherein said particulate blend was hydrated by a solubilizing binder to dissolve calcium phosphate of said calcium phosphate source in said particulate blend, with reprecipitation of said calcium phosphate producing produce said pre-ceramic.

50. (original) The composition of claim 49, wherein said pre-ceramic comprises hydroxyapatite.

51. (currently amended) The composition of claim 49, wherein said ~~ink-jettable aqueous~~ binder comprises:

wetting agents;

humectants; and

surfactants.

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52. (currently amended) A solid three-dimensional prototype composition, comprising:  
multiple layers of pre-ceramic deposited in contact with one another, each of said  
multiple layers of pre-ceramic comprising a particulate blend including a calcium phosphate  
source;  
wherein said particulate blend was hydrated by a solubilizing binder to produce said  
pre-ceramic;

~~The composition of claim 49,~~ wherein said particulate blend comprises:  
tetracalcium phosphate;  
citric acid;  
CaAl-LDH (NO<sub>3</sub>);  
poly acrylic acid (60k);  
Li<sub>3</sub>PO<sub>4</sub>; and  
magnesium fluoride.

53. (original) The composition of claim 49, wherein said pre-ceramic has a compression modulus of 0.05 Giga-Pascal.

54. (original) The composition of claim 49, wherein said pre-ceramic is configured to produce a ceramic upon firing.

55. (original) The composition of claim 54, wherein said ceramic is configured to have a compression modulus over 14.0 Giga-Pascal.

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56-62. (cancelled)

63. (new) The composition of claim 49, wherein said layer of pre-ceramic further comprising a reaction retardant.

64. (new) The composition of claim 63, wherein said reaction retardant modifies a pH of said particulate blend thereby preventing premature reactions.

65. (new) The composition of claim 49, further comprising a layered double hydroxide.

66. (new) The composition of claim 49, wherein said particulate blend further comprises an accelerant to promote hardening of said pre-ceramic upon application of said binder.

67. (new) The composition of claim 49, wherein said binder further comprises a pH modifier.

68. (new) The composition of claim 49, wherein said layers of pre-ceramic are disposed at edges of layers of said particulate blend so as to form a shell around a quantity of said particulate blend corresponding to a shape of an object being formed.

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69. (new) A composition for forming a solid three-dimensional prototype, said composition, comprising:

a particulate blend including a calcium phosphate source from which pre-ceramic layers of an object being fabricated are formed; and

a solubilizing binder for selective introduction into said particulate blend, wherein said binder is configured to dissolve calcium phosphate of said calcium phosphate source, with reprecipitation of said calcium phosphate producing said pre-ceramic.

70. (new) The composition of claim 69, wherein said solubilizing binder comprises a humectant or a surfactant.

71. (new) The composition of claim 69, wherein said calcium phosphate source comprises at least one of a tetracalcium phosphate, a monocalcium phosphate (MCP), a monocalcium phosphate monohydrate (MCPM), a  $\text{Ca}(\text{H}_2\text{PO}_4)_2 \cdot \text{H}_2\text{O}$ , a dicalcium phosphate (DCP), a dicalcium phosphate dehydrate (DCPD), a  $\text{CaHPO}_4$ , a  $\text{CaHPO}_4 \cdot \text{H}_2\text{O}$ , an  $\alpha$ -tricalcium phosphate, a  $\beta$ -tricalcium phosphate or hydroxyapatite.

72. (new) The composition of claim 69, wherein said particulate blend further comprises a reaction accelerant.

73. (new) The composition of claim 72, wherein said reaction accelerant comprises one of a lithium phosphate, an aluminum nitrate, or an iron nitrate.

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74. (new) The composition of claim 69, wherein said particulate blend further comprises polyacids.

75. (new) The composition of claim 74, wherein said polyacids comprise one of a polyvinyl phosphoric acid, a homo- or a copolymer of unsaturated aliphatic carbonic acid, a polyvinyl sulphonic acid, a polystyrene sulphonic acid, or a polyacrylic acid (PAA).

76. (new) The composition of claim 69, wherein said particulate blend further comprising a reaction retardant.

77. (new) The composition of claim 76, wherein said reaction retardant comprises one of a citric acid, an oxalic acid, an ethylenediamine tetraacetic acid, a sodium phosphate, a tartaric acid, or a salicylic acid.

78. (new) The composition of claim 69, wherein said particulate blend further comprises a layered double hydroxide.

79. (new) The composition of claim 78, wherein said layered double hydroxide comprises one of CaAl-LDH, MgAl-LDH, ZnAl-LDH, CaAl-LDH, MgAl-LDH or ZnAl-LDH.

80. (new) The system of claim 78, wherein said layered double hydroxide comprises a phosphate, a sulfate, a nitrate, a carbonate, or a polyanion, wherein said

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phosphate, sulfate, nitrate, carbonate, or polyanion is intercalated into said layered double hydroxide.

81. (new) The system of claim 78, wherein said layered double hydroxide is based on one of magnesium, zinc, aluminum, calcium, or iron.

82. (new) The system of claim 69, wherein said particulate blend comprises:  
tetracalcium phosphate;  
citric acid;  
CaAl-LDH (NO<sub>3</sub>);  
polyacrylic acid (60k);  
Li<sub>3</sub>PO<sub>4</sub>; and  
magnesium fluoride.

83 (new) The system of claim 69, wherein said solubilizing binder comprises:  
phosphoric acid (H<sub>3</sub>PO<sub>4</sub>);  
2-pyrrolidone;  
liponic ethylene glycol (LEG-1);  
SURFYNOL 465;  
Water;  
1,5-pentanediol; and  
TERGITOL-15-s-7.

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84. (new) The method of claim 69, wherein said binder comprises a pH modifier.

85. (new) The method of claim 84, wherein said pH modifier comprises one of a phosphoric acid ( $\text{H}_3\text{PO}_4$ ), a mineral acid, a phytic acid, an acetic acid, an ethanoic acid, a potassium hydroxide ( $\text{KOH}$ ), a lithium hydroxide ( $\text{LiOH}$ ), a sodium hydroxide ( $\text{NaOH}$ ), a  $\text{NH}_4\text{OH}$ , an aluminum hydroxide ( $\text{Al}(\text{OH})_3$ ), a magnesium hydroxide ( $\text{Mg}(\text{OH})_2$ ), a calcium hydroxide ( $\text{Ca}(\text{OH})_2$ ), or a barium hydroxide ( $\text{Ba}(\text{OH})_2$ ).